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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,751	09/25/2003	Brent D. Zollinger	H0006231	9345

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EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 01/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,751

Applicant(s)

ZOLLINGER ET AL.

Examiner

Thai-Ba Trieu

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/16/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

The listing of references of **US Patent Nos. 6,269,642 and 6,419,464** in the specification is not a proper information disclosure statement (See Page 7, line 13). 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show "**vane 20**" (See Page 2, line 19) as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several

views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 2 and 6 are objected to because of the following informalities:

- In Claim 2, lin3, "**core-out section**" should be replaced by – **cored-out section** – (for correction typo error).
- In claim 6, line 2, "**service**" should be replaced by – **surface** --; and line 4, "**tailing edge**" should be replaced – **trailing edge** -- (for correcting typo error).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

Art Unit: 3748

In claim 1, line 19; and claim 9, lines 26-27, the recitation of "cored-out section extending a distance from the trailing edge towards the leading edge" renders the claim indefinite, since it is not clear that how long a distance (e.g. 1 cm, 1 inch, 1 mm etc...) should be as the cored-out section extends from the trailing edge towards the leading edge. Applicant is required to identify the measurement of this distance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swearingen (Patent Number 4,502,836), in view of Morrison et al. (Patent Number 6,709,230 B2).

Swearingen discloses a variable geometry turbocharger assembly comprising:

a turbine housing (not Numbered) having an exhaust gas inlet and an outlet, a volute connected to the inlet, and a nozzle wall adjacent the volute;

a turbine wheel carried within the turbine housing and attached to a shaft;

a plurality of vanes disposed within the turbine housing between the exhaust gas inlet and turbine wheel (the well-known components of a turbine), each vane comprising:

an inner airfoil surface (not Numbered) oriented adjacent the turbine wheel (See Figure 2);

an outer airfoil surface (Not Numbered) oriented opposite and parallel to the inner airfoil surface (See Figure 2);

first and second axial surfaces (Not Numbered) each positioned perpendicular to and interposed between the inner and outer airfoil surfaces (See Figure 2);

a leading edge positioned along a first inner and outer airfoil surface junction (See Figure 2);

a trailing edge positioned along a second inner and outer airfoil surface junction (See Figure 2);

an opening means (25) disposed through the second axial surface for accommodating a post (24) that is interposed between the vane and the nozzle wall (14);

actuating means (26) positioned on the first axial surface;

an annular unison ring (12) position adjacent the vanes along the first axial surface and comprising means for cooperating with the actuating means (28) to engage the plurality of vanes to rotate the vanes within the turbocharger;

wherein at least one of the first and second axial surfaces comprises a solid section that occupies at least 25 percent of the axial surface area and that extends from the leading edge towards the trailing

Art Unit: 3748

edge, and a cored-out section that extends a distance from the trailing edge towards the leading edge (See figures 1-2); and

wherein the solid section occupies greater than 50 percent of the surface area of the first axial surface (See Figure 2).

However, Swearingen fails to disclose a solid section being a composite construction.

Morrison teaches that it is conventional in the ceramic matrix composite gas turbine vane art, to utilize a solid section being a composite construction (28) (See Figures 2, and 4-5, and Column 3, lines 31-51).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a solid section being a composite construction, as taught by Morrison, to improve the efficiency of the Swearingen turbocharger, since the use thereof would have increased the mechanical strength of the turbocharger vanes as they operate in the high firing temperature condition of the turbocharger.

Allowable Subject Matter

Claims 2-3, 5-8, 10-11, and 13 are would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The IDS (PTO-1449) filed on February 16, 2004 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Zinsmeyer et al. (US Patent Number 6,547,520 B2) disclose a rotating vane diffuser for a centrifugal compressor.
- Carlson et al. (US Patent Number 5,127,802) disclose reinforced full-spar composite rotor blade.
- Arnold et al. (US Patent Number 6,729,134 B2) disclose a variable geometry turbocharger.
- Cook et al. (US Patent Number 5,439,353) disclose a composite blade with reinforced leading edge.
- Le Balc'h (US Patent Number 4,935,277) discloses a blade constructed of composite materials.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3748

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
January 12, 2005


Thai-Ba Trieu
Primary Examiner
Art Unit 3748